that there were four cotyledons and two germs, and that the place of union was midway between the pairs of cotyledons. From the base of the cotyledons extending the whole length of the radicle, the union existed. The length of this united part was from half an inch to one inch, according to the vigor of the plant.

Another lesson he thought was afforded by these specimens. Dr. Asa Gray had recently remarked, in *Silliman's Journal*, that European botanists still believed what American botanists had learned to doubt, that the radicle was a true root, rather than a morphologized joint of stem. Here was, he believed, an illustration of the American view. These radicles, which had evidently united together under the seed coat, had elongated after protrusion, just as a young shoot with all its parts formed in the bud elongates after the bursting of the bud scales. They comprised the half inch, or inch united portions before referred to. If these radicular portions of the seed were of the nature of root rather than of stem, we might expect to see lateral fibres push from them, as we do see from the true roots, which start out below the union. But these parts are as free from rootlets as any portion of the true stems above the cotyledon points, indicating, as had been suggested, that their properties were rather of stem than of root.

December 13th.

The President, DR. RUSCHENBERGER, in the Chair.

Thirty-five members present.

The following paper was presented for publication :

"Remarks on Dr. Asa Gray's Notes on Buckley's Rare Plants of Texas." By Prof. S. B. Buckley.

PROF LEIDY exhibited a lower jaw of an aged man, recently obtained in his dissecting room. The teeth had all been lost except one, and the alveolar border had been absorbed so that the body of the bone was reduced as usual to half its original depth. The remaining tooth is a completely developed and full grown third molar of large size, which lies imbedded in the jaw horizontally, with the unworn triturating surface directed towards the position which had been occupied by the teeth in advance. The tooth is perfectly sound, and in this old jaw, in which all the other teeth had been lost and the alveoli obliterated, favors the view that the teeth are liable to caries only when exposed to exterior influences. Similar specimens of teeth remaining imbedded in the jaw are not unfrequent, but the one exhibited is the oldest which Prof. Leidy had seen.

PROF. LEIDY also exhibited a wood carving from St. Paul de Loando, Western Africa, presented to him by Dr. Charles L. Cassin, U. S. N. The carving, by a native African, represents two adult human figures, apparently of the two, united by an intervening plate, so as to remind one of the famous Siamese twins. The connection may have been merely intended for support, though Prof. Leidy thought the carving may have been intended to represent a pair of united twins, similar to those just named, and which existed in the locality in which the carving was made.

December 20th.

MR. VAUX, Vice-President, in the Chair.

Twenty-two members present.

The following paper was presented for publication:

"A new classification of the North American Falconidæ, with descriptions of three new species." By Robert Ridgway.

PROF. LEIDY directed attention to a preparation of the trunk of an adult male subject, from the dissecting room of the University, in which all the viscera were reversed in the order of their usual position. The heart is reversed in position with its apex directed to the right. The aorta descends on the right side; and the cavæ are placed on the left of the vertebral column. The liver is placed in the left, the spleen in the right side. The stomach is reversed, and the large intestine commencing in the left iliac region terminates in the rectum from the right side.

THEO. D. RAND called the attention of the Academy to a remarkable exposure of rock on the North Pennsylvania Railroad, between Abingdon and Edge Hill stations, about eleven miles from Philadelphia. The rock is Potsdam sandstone, highly micaceous, in strata nearly vertical, and divided by frequent joints. Its strike is about N. by E. At the point mentioned a quarry has been opened following the crest of the hill, the northern end of the quarry giving therefore a section. At the bottom of the excavation the layers seem undisturbed and perfectly vertical, but above they are thrown to the southwest and crushed and broken in a remarkable manner, the layers nearest the surface being horizontal or even dipping to the S. W., but still retaining their relative positions. The breaks in the rocks are fresh and sharp, and the spaces between them empty, and the whole appearance is as if a very recent force acting near the surface had thrown them from a vertical into their present positions. Some of these spaces were two or three inches in width and apparently of great depth.

It is probable, however, that it is due to a folding of the strata, as in the cut of the Railroad immediately west of this exposure. The rocks of the quarry appear perfectly vertical while south of them, probably fifty feet, is a well defined anticlinal axis or fold. Still the broken, not bent condition of the rocks, their very marked and sudden change from the vertical, the freshness and sharpness of the fractures seem almost irreconcilable with a fold taking place as long ago as this anticlinal axis, and it is well worthy of examination by geologists.

December 27th.

The President, DR. RUSCHENBERGER, in the Chair.

Thirty-four members present.

On motion, the election of members was postponed until the next meeting for business.

PROF. LEEDS called attention to an interesting geological phenomenon in the vicinity of Wayne station on the Germantown Railroad, about three miles from Philadelphia. At the point where Wayne street cuts through a fold in the micaceous schists of this district, there occur huge imbedded boulders of very hard compact hornblende rock. The matrix of mica schist has the appearance of an altered argillaceous slate, and rapidly decays on exposure. The hornblende rocks are thus left protruding above the soil, and would be difficult to account for if attention had not previously been called to them in place. As occurring in the schist, they are rounded upon their corners and edges and smooth upon the sides. It does not appear an improbable conjecture to suppose that they constituted a part of a primitive surface formation—perhaps the original earth crust—which was broken up before the de-